

Incidence of Traumatic Brain Injury

New Jersey, 1999

Center for Health Statistics
Office of Policy and Research
New Jersey Department of Health and Senior Services

Clifton R. Lacy, M.D., Commissioner
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INCIDENCE OF TRAUMATIC BRAIN INJURY NEW JERSEY, 1999

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TABLE OF CONTENTS

Background	1
TBI highlights, New Jersey, 1999	1

TECHNICAL NOTES

1. TBI surveillance case definition	4
2. Categories used in the cause of injury	4
References	5

LIST OF FIGURES

Figure 1:	Traumatic brain injury rate by age and sex, New Jersey, 1999.....	2
Figure 2:	Proportion of traumatic brain injuries by cause and sex, New Jersey, 1999	2
Figure 3:	Age-adjusted traumatic brain injury rates by county of residence, New Jersey, 1999	3

LIST OF TABLES

Table 1:	Traumatic brain injuries by age and outcome, New Jersey, 1999.....	6
Table 2:	Traumatic brain injuries by age and sex, New Jersey, 1999	7
Table 3:	Traumatic brain injuries by age and race/ethnicity, New Jersey, 1999.....	8
Table 4:	Traumatic brain injuries by age and cause, New Jersey, 1999	9
Table 4A:	Motor-vehicle-related traumatic brain injuries by age and outcome, New Jersey, 1999	10
Table 4B:	Fall-related traumatic brain injuries by age and outcome, New Jersey, 1999	11
Table 4C:	Assault-related traumatic brain injuries by age and outcome, New Jersey, 1999	12
Table 4D:	Self-inflicted traumatic brain injuries by age and outcome, New Jersey, 1999	13
Table 5:	Firearm-related traumatic brain injuries by age and outcome, New Jersey, 1999	14

Table 6A:	Traumatic brain injuries by cause and sex, New Jersey, 1999	15
Table 6B:	Traumatic brain injuries by cause and outcome, New Jersey, 1999.....	16
Table 7A:	Traumatic brain injuries by county of residence and sex, New Jersey, 1999	17
Table 7B:	Traumatic brain injuries by county of residence and outcome, New Jersey, 1999	18
Table 7C:	Traumatic brain injuries by county of residence and major cause, New Jersey, 1999	19
Table 7D:	Traumatic brain injuries by county of residence and age, New Jersey, 1999	20-21
Table 8:	Traumatic brain injury-related hospitalizations by disposition and age, New Jersey, 1999	22
Table 9:	Traumatic brain injury-related hospitalization charges and in-patient care days by expected primary payer, New Jersey, 1999.....	22

LIST OF MAPS

Map 1:	Traumatic brain injuries by county of residence, New Jersey, 1999.....	23
Map 2:	Traumatic brain injury rate by county of residence, New Jersey, 1999	24
Map 3:	Transport-related traumatic brain injury rates by county of residence, New Jersey, 1999	25
Map 4:	Fall-related traumatic brain injury rates by county of residence, New Jersey, 1999	26
Map 5:	Assault-related traumatic brain injury rates by county of residence, New Jersey, 1999	27

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INCIDENCE OF TRAUMATIC BRAIN INJURY NEW JERSEY, 1999

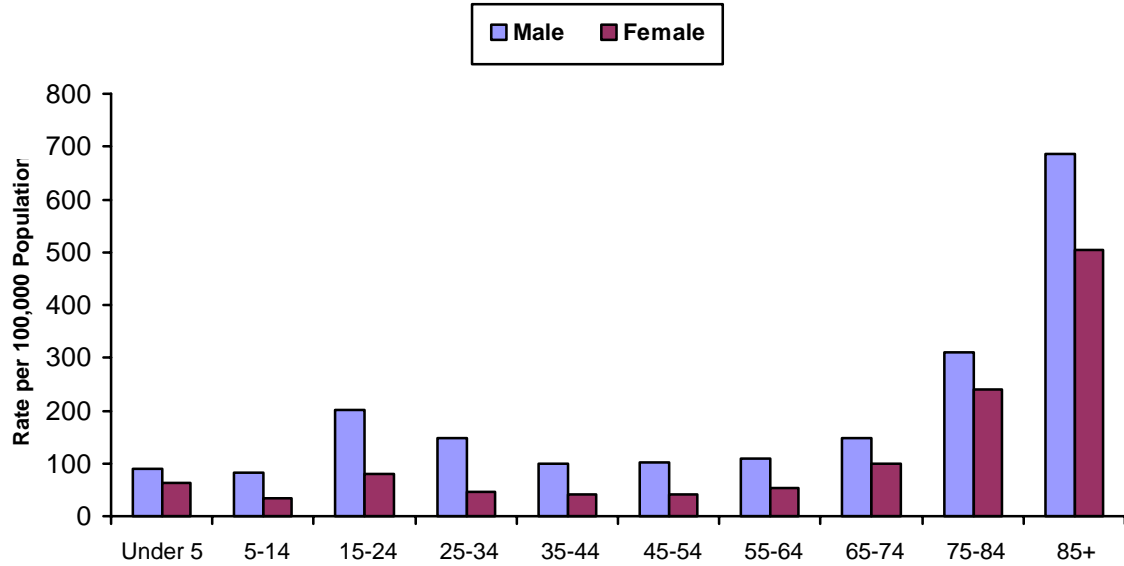
BACKGROUND

This report presents Traumatic Brain Injury (TBI) incidence data for New Jersey in 1999 based on hospital discharge data (UB-92) and the single and multiple cause of death files. The Center for Health Statistics (CHS), Office of Policy and Research, Office of the Commissioner, New Jersey Department of Health and Senior Services has conducted TBI surveillance since 1995. In 2000, CHS received a grant from the Centers for Disease Control and Prevention (CDC) for Central Nervous System (CNS) surveillance. Starting with 2000 incidence data, New Jersey will submit TBI incidence data to CDC to contribute to a multi-state TBI and Spinal Cord Injury (SCI) surveillance system. The case definition and International Classification of Disease (ICD) codes used are provided in the Technical Notes.

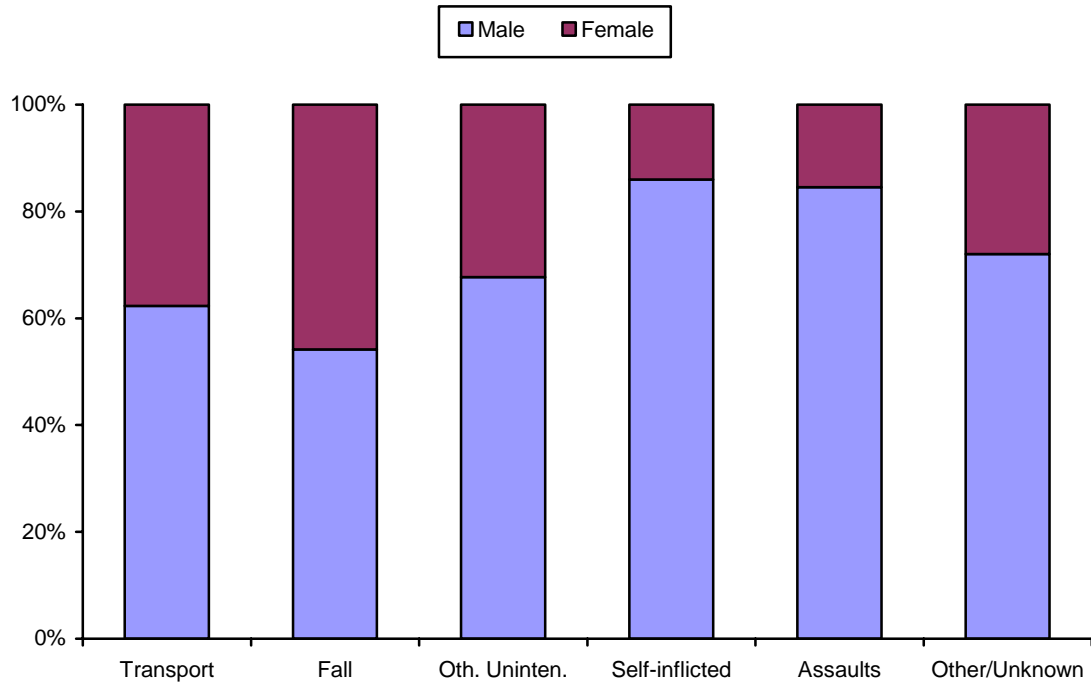
TBI HIGHLIGHTS: NEW JERSEY, 1999

1. In 1999, over 1,000 New Jerseyans died and more than 7,400 were treated in acute care hospitals for TBIs (Table 1). Annually, about one-third of all injury deaths and 10% of injury hospitalizations result from TBIs.
2. The highest proportion and rates of TBI occurred among young adults and the elderly (Table 2 and Figure 1). This is true for all racial and ethnic groups (Table 3).
3. The primary causes of TBI were transport-related (40.3%), falls (34.2%) and intentional injuries (self-inflicted and assaults combined) (11.5%) (Table 4). TBI disproportionately affects males in all categories of external causes (Figure 2).
4. Of the 8,451 TBI occurrences in 1999, about 66% of injured persons were released to home, 19.1% received continued treatment such as skilled nursing facilities, rehabilitation, or home therapy, and about 12.0% died with or without medical attention (Table 8).
5. In 1999, in-patient hospitalization charges for TBIs in New Jersey amounted to over 212 million dollars with total in-patient care days of 52,786 for 7,871 hospitalizations (Table 9).

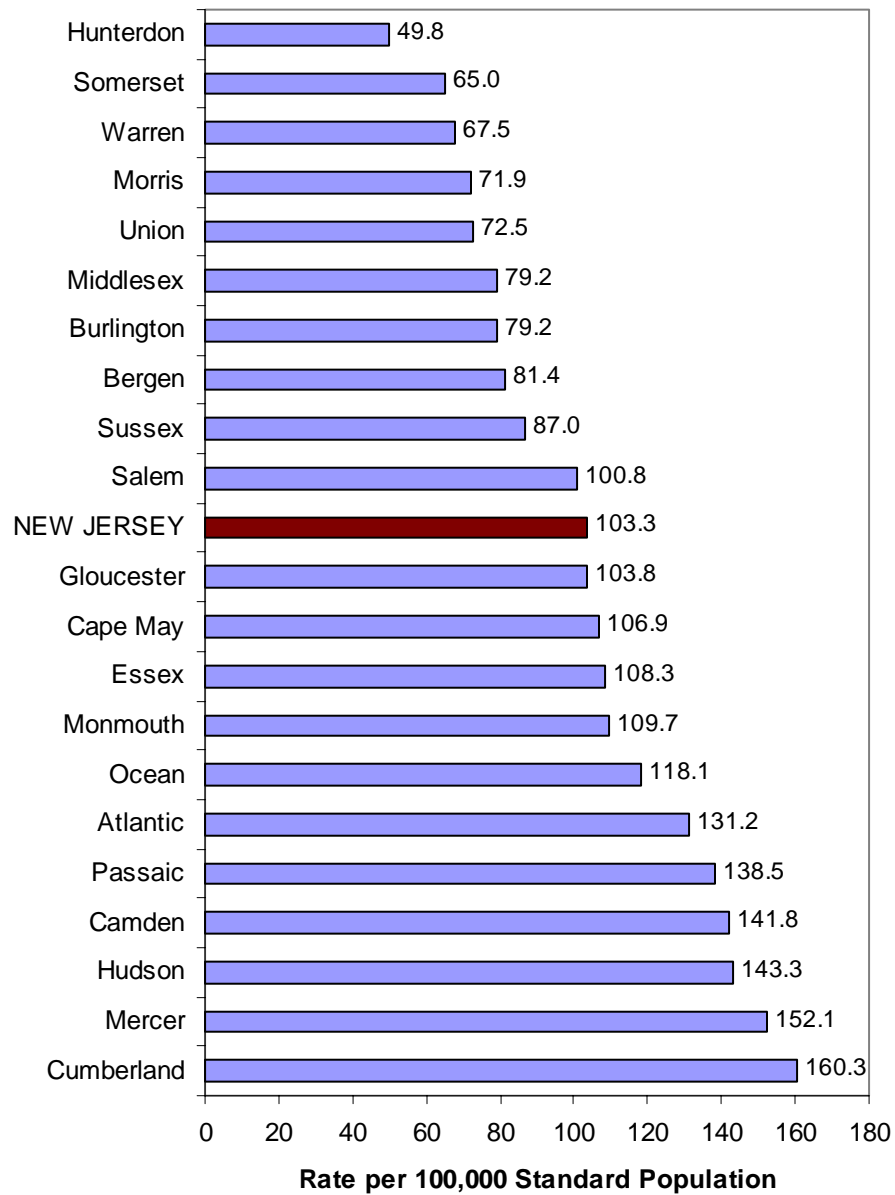
**Figure 1: Traumatic Brain Injury Incidence Rates Per 100,000
By Age and Sex: New Jersey, 1999**



**Figure 2: Proportion of Traumatic Brain Injuries
by Cause and Sex: New Jersey, 1999**



**Figure 3: Age-adjusted Traumatic Brain Injury Rates
By County of Residence: New Jersey, 1999**



TECHNICAL NOTES

1. TBI Surveillance case definition¹

Morbidity:

TBI cases were identified from the UB-92 data file using the ICD-9-CM codes:

800.0-801.9:	Fracture of the vault of the skull
803.0-804.9:	Other and unqualified and multiple fractures of the skull
850.0-854.1:	Intracranial injury, including concussion, contusion, laceration, and hemorrhage
959.01:	Head injury, unspecified

Mortality:

The ICD-10 was implemented in 1999. The ICD-10 codes as recommended by CDC for inclusion at this time are:

S01.0-S01.9:	Open wound of head
S02.0-S02.1, S02.3, S02.7-S02.9:	Fracture of Skull and Facial Bones
S06.0, S06.2-S06.9:	Intracranial injury
S07.0-S07.1, S07.8-S07.9:	Crushing injury of head
S09.7-S09.9:	Other unspecified injuries of head
T01.0:	Open wounds involving head and neck
T02.0:	Fractures involving head and neck
T04.0:	Crushing injuries involving head and neck
T06.0:	Injuries of brain and cranial nerve with injuries of nerves and spinal cord at neck level
T90.1-T90.2, T90.4-T90.5, T90.8-T90.9:	Sequelae of injuries of head

Data excludes out-of-state hospitalizations to NJ residents and out-of-state residents hospitalized in acute care facilities of New Jersey.

Population estimates developed by the U.S. Bureau of the Census⁶ were used to compute age-specific rates and year 2000 U.S. standard populations were used to compute age-adjusted rates.

2. Categories used in the cause of injury (E code)

Description	ICD-9 Codes	ICD-10 codes
All transport	E800-E848	V01-V99
Accidental Falls	E880-E888	W00-W19
Other unintentional	E850-E949 excluding falls	W20-X59
Self-inflicted	E950-E959	X60-X84
Assaults	E960-E969	X85-Y09
Undetermined	E980-E989	Y10-Y34
Other external	E990-E999	Y35-Y89
All causes	E800-E999	V01-Y89

REFERENCES

1. Department of Health and Human Services, The Centers for Disease Control and Prevention. Annual Data Submission Standards. Central Nervous System Surveillance Injury Surveillance 2000.
2. New Jersey Department of Health and Senior Services, Center for Health Statistics. (2001). Traumatic Brain Injury in New Jersey, 1997. Trenton, NJ. Web address: www.state.nj.us/health/chs
3. New Jersey Department of Health and Senior Services, Center for Health Statistics. (1997). Traumatic Brain Injury in New Jersey, 1994. Trenton, NJ. Web address: www.state.nj.us/health/chs
4. New Jersey Department of Health and Senior Services, Center for Health Statistics. (1999). Validation of New Jersey's Hospital Discharge and Cause-of-death related to Traumatic Brain Injuries. Trenton, NJ.
5. New Jersey Department of Health and Senior Services, Center for Health Statistics. (1997). Evaluation of External Cause-of-Injury Code Compliance in 1994 New Jersey Hospital Discharge Data. Trenton, NJ.
6. U.S. Bureau of the Census, www.census.gov

**TABLE 1: TRAUMATIC BRAIN INJURIES
BY AGE AND OUTCOME
NEW JERSEY, 1999**

AGE GROUP	FATAL		NON-FATAL		TOTAL	
	Number	Rate per 100,000	Number	Rate per 100,000	Number	Rate per 100,000
<i>Under 5</i>	16	2.9	400	73.6	416	76.6
<i>5-14</i>	24	2.1	659	57.6	683	59.7
<i>15-24</i>	121	12.3	1,291	130.7	1,412	143.0
<i>25-34</i>	115	10.4	953	86.1	1,068	96.5
<i>35-44</i>	118	8.3	879	61.7	997	69.9
<i>45-54</i>	100	9.1	686	62.3	786	71.4
<i>55-64</i>	90	12.4	495	68.2	585	80.5
<i>65-74</i>	126	21.8	575	99.6	701	121.4
<i>75-84</i>	196	49.3	867	218.1	1,063	267.4
<i>85+</i>	135	101.2	605	453.6	740	554.9
<i>TOTAL</i>	1,041	12.8	7,410	91.0	8,451	103.8
<i>Age-adjusted</i>		12.5		91.0		103.5

Note:

1. Traumatic brain injuries include concussions, skull fractures, and intracranial injuries resulting from an external force, and are selected using:
ICD-9-CM codes 800.0-801.9, 803.0-804.9, 850.0-854.1, 959.01 for morbidity, and ICD-10 codes S01.0-S01.9, S02.0 - S02.3, S02.7-S02.9, S06.0-S06.9, S07.0-S07.1, S07.8-S07.9, S09.7-S09.9, T01.0, T02.0, T04.0, T06.0, T90.1-T90.2, T90.4-T90.5, T90.8-T90.9 for mortality.
2. Rates are adjusted to the 2000 U.S. standard population.
3. Source: Center for Health Statistics, New Jersey Department of Health and Senior Services.

**TABLE 2: TRAUMATIC BRAIN INJURIES
BY AGE AND SEX
NEW JERSEY, 1999**

AGE GROUP	MALE		FEMALE		TOTAL	
	Number	Rate per 100,000	Number	Rate per 100,000	Number	Rate per 100,000
<i>Under 5</i>	250	90.1	166	62.5	416	76.6
<i>5-14</i>	490	83.6	193	34.6	683	59.7
<i>15-24</i>	1,020	202.1	392	81.2	1,412	143.0
<i>25-34</i>	805	147.1	263	47.0	1,068	96.5
<i>35-44</i>	703	100.5	294	40.5	997	69.9
<i>45-54</i>	548	102.6	238	42.0	786	71.4
<i>55-64</i>	383	110.6	202	53.2	585	80.5
<i>65-74</i>	378	147.8	323	100.4	701	121.4
<i>75-84</i>	485	311.0	578	239.3	1,063	267.4
<i>85+</i>	264	676.6	476	504.5	740	554.9
<i>TOTAL</i>	5,326	135.0	3,125	74.5	8,451	103.8
<i>Age-adjusted</i>		140.4		69.0		103.5

Note:

1. Traumatic brain injuries include concussions, skull fractures, and intracranial injuries resulting from an external force, and are selected using:
ICD-9-CM codes 800.0-801.9, 803.0-804.9, 850.0-854.1, 959.01 for morbidity, and ICD-10 codes S01.0-S01.9, S02.0 - S02.3, S02.7-S02.9, S06.0-S06.9, S07.0-S07.1, S07.8-S07.9, S09.7-S09.9, T01.0, T02.0, T04.0, T06.0, T90.1-T90.2, T90.4-T90.5, T90.8-T90.9 for mortality.
2. Rates are adjusted to the 2000 U.S. standard population.
3. Source: Center for Health Statistics, New Jersey Department of Health and Senior Services.

**TABLE 3: TRAUMATIC BRAIN INJURIES
BY AGE AND RACE/ETHNICITY
NEW JERSEY, 1999**

<i>Age group</i>	Number				Rate per 100,000			
	White	Black	Hispanic	Total*	White	Black	Hispanic	Total*
<i>Under 5</i>	181	97	88	416	56.1	98.1	93.4	76.6
<i>5 – 14</i>	359	165	85	683	49.9	80.7	48.7	59.7
<i>15 – 24</i>	773	257	240	1,412	127.9	142.2	150.8	143.0
<i>25 – 34</i>	521	242	184	1,068	75.8	131.1	105.1	96.5
<i>35 – 44</i>	571	222	116	997	58.4	110.5	65.6	69.9
<i>45 – 54</i>	497	131	78	786	62.1	94.6	70.9	71.4
<i>55 – 64</i>	388	80	49	585	72.1	87.1	71.3	80.5
<i>65 – 74</i>	539	78	36	701	116.7	129.9	86.4	121.4
<i>75 – 84</i>	913	46	34	1,063	266.9	162.3	169.9	267.4
<i>85+</i>	629	35	32	740	545.0	388.2	470.4	554.9
<i>Total</i>	5,371	1,353	942	8,451	96.5	113.0	91.7	103.8
<i>Age-adjusted</i>					91.5	116.2	95.8	103.5

Note:

1. *Total includes all other and unknown races.
2. Numbers for Hispanics and Asians may have been undercounted, and may have been classified under the other or unknown category. Caution should be used in interpreting these rates.
3. Traumatic brain injuries include concussions, skull fractures, and intracranial injuries resulting from an external force, and are selected using:
ICD-9-CM codes 800.0-801.9, 803.0-804.9, 850.0-854.1, 959.01 for morbidity, and ICD-10 codes S01.0-S01.9, S02.0 - S02.3, S02.7-S02.9, S06.0-S06.9, S07.0-S07.1, S07.8-S07.9, S09.7-S09.9, T01.0, T02.0, T04.0, T06.0, T90.1-T90.2, T90.4-T90.5, T90.8-T90.9 for mortality.
4. Rates are adjusted to 2000 U.S. Standard population.
5. Source: Center for Health Statistics, New Jersey Department of Health and Senior Services.

**TABLE 4: TRAUMATIC BRAIN INJURIES
BY AGE AND CAUSE
NEW JERSEY, 1999**

<i>Age group</i>	Motor vehicle	Other trans- port	Number					Total
			Fall	Other uninten- tional	Self- inflic- ted	Assaults	Other/ un- known	
<i>Under 5</i>	63	7	265	46	0	21	14	416
<i>5 – 14</i>	250	80	177	112	1	16	47	683
<i>15 – 24</i>	741	90	119	128	17	239	78	1,412
<i>25 – 34</i>	496	59	143	70	35	210	55	1,068
<i>35 – 44</i>	411	76	176	87	27	183	37	997
<i>45 – 54</i>	286	56	229	76	31	76	32	786
<i>55 – 64</i>	215	43	214	57	15	25	16	585
<i>65 – 74</i>	148	49	378	69	19	18	20	701
<i>75 – 84</i>	198	54	641	111	17	4	38	1,063
<i>85+</i>	56	29	552	67	9	5	22	740
<i>Total</i>	2,864	543	2,894	823	171	797	359	8,451

<i>Age group</i>	Motor vehicle	Other trans- port	Fall	Rate per 100,000				Total
				Other uninten- tional	Self- inflic- ted	Assaults	Other/ un- known	
<i>Under 5</i>	11.6	1.3	48.8	8.5	0.0	3.9	2.6	76.6
<i>5 – 14</i>	21.8	7.0	15.5	9.8	0.1	1.4	4.1	59.7
<i>15 – 24</i>	75.0	9.1	12.0	13.0	1.7	24.2	7.9	143.0
<i>25 – 34</i>	44.8	5.3	12.9	6.3	3.2	19.0	5.0	96.5
<i>35 – 44</i>	28.8	5.3	12.3	6.1	1.9	12.8	2.6	69.9
<i>45 – 54</i>	26.0	5.1	20.8	6.9	2.8	6.9	2.9	71.4
<i>55 – 64</i>	29.6	5.9	29.5	7.8	2.1	3.4	2.2	80.5
<i>65 – 74</i>	25.6	8.5	65.5	12.0	3.3	3.1	3.5	121.4
<i>75 – 84</i>	49.8	13.6	161.3	27.9	4.3	1.0	9.6	267.4
<i>85+</i>	42.0	21.7	413.9	50.2	6.7	3.7	16.5	554.9
<i>Total</i>	35.2	6.7	35.5	10.1	2.1	9.8	4.4	103.8

Note:

1. Traumatic brain injuries include concussions, skull fractures, and intracranial injuries resulting from an external force, and are selected using:
ICD-9-CM codes 800.0-801.9, 803.0-804.9, 850.0-854.1, 959.01 for morbidity, and ICD-10 codes S01.0-S01.9, S02.0 - S02.3, S02.7-S02.9, S06.0-S06.9, S07.0-S07.1, S07.8-S07.9, S09.7-S09.9, T01.0, T02.0, T04.0, T06.0, T90.1-T90.2, T90.4-T90.5, T90.8-T90.9 for mortality.
2. Source: Center for Health Statistics, New Jersey Department of Health and Senior Services.

**TABLE 4A: MOTOR VEHICLE-RELATED
TRAUMATIC BRAIN INJURIES
BY AGE AND OUTCOME
NEW JERSEY, 1999**

AGE GROUP	FATAL		NON-FATAL		TOTAL	
	Number	Rate per 100,000	Number	Rate per 100,000	Number	Rate per 100,000
<i>Under 5</i>	3	0.6	60	11.0	63	11.6
<i>5-14</i>	17	1.5	233	20.4	250	21.8
<i>15-24</i>	56	5.7	685	69.4	741	75.0
<i>25-34</i>	33	3.0	463	41.8	496	44.8
<i>35-44</i>	32	2.2	379	26.6	411	28.8
<i>45-54</i>	22	2.0	264	24.0	286	26.0
<i>55-64</i>	18	2.5	197	27.1	215	29.6
<i>65-74</i>	17	2.9	131	22.7	148	25.6
<i>75-84</i>	30	7.5	168	42.3	198	49.8
<i>85+</i>	12	9.0	44	33.0	56	42.0
<i>TOTAL</i>	240	2.9	2,624	32.2	2,864	35.2
<i>Age-adjusted</i>		3.0		32.8		35.8

Note:

1. Traumatic brain injuries include concussions, skull fractures, and intracranial injuries resulting from an external force, and are selected using:
ICD-9-CM codes 800.0-801.9, 803.0-804.9, 850.0-854.1, 959.01 for morbidity, and ICD-10 codes S01.0-S01.9, S02.0 - S02.3, S02.7-S02.9, S06.0-S06.9, S07.0-S07.1, S07.8-S07.9, S09.7-S09.9, T01.0, T02.0, T04.0, T06.0, T90.1-T90.2, T90.4-T90.5, T90.8-T90.9 for mortality.
2. Rates are adjusted to 2000 U.S. standard population.
3. Source: Center for Health Statistics, New Jersey Department of Health and Senior Services.

**TABLE 4B: FALL-RELATED
TRAUMATIC BRAIN INJURIES
BY AGE AND OUTCOME
NEW JERSEY, 1999**

AGE GROUP	FATAL		NON-FATAL		TOTAL	
	Number	Rate per 100,000	Number	Rate per 100,000	Number	Rate per 100,000
<i>Under 5</i>	2	0.4	263	48.4	265	48.8
<i>5-14</i>	1	0.1	176	15.4	177	15.5
<i>15-24</i>	3	0.3	116	11.7	119	12.0
<i>25-34</i>	6	0.5	137	12.4	143	12.9
<i>35-44</i>	16	1.1	160	11.2	176	12.3
<i>45-54</i>	15	1.4	214	19.4	229	20.8
<i>55-64</i>	28	3.9	186	25.6	214	29.5
<i>65-74</i>	48	8.3	330	57.2	378	65.5
<i>75-84</i>	88	22.1	553	139.1	641	161.3
<i>85+</i>	76	57.0	476	356.9	552	413.9
<i>TOTAL</i>	283	3.5	2,611	32.1	2,894	35.5
<i>Age-adjusted</i>		3.3		31.1		34.4

Note:

1. Traumatic brain injuries include concussions, skull fractures, and intracranial injuries resulting from an external force, and are selected using:
ICD-9-CM codes 800.0-801.9, 803.0-804.9, 850.0-854.1, 959.01 for morbidity, and ICD-10 codes S01.0-S01.9, S02.0 - S02.3, S02.7-S02.9, S06.0-S06.9, S07.0-S07.1, S07.8-S07.9, S09.7-S09.9, T01.0, T02.0, T04.0, T06.0, T90.1-T90.2, T90.4-T90.5, T90.8-T90.9 for mortality.
2. Rates are adjusted to 2000 U.S. standard population.
3. Source: Center for Health Statistics, New Jersey Department of Health and Senior Services.

**TABLE 4C: ASSAULT-RELATED
TRAUMATIC BRAIN INJURIES
BY AGE AND OUTCOME
NEW JERSEY, 1999**

AGE GROUP	FATAL		NON-FATAL		TOTAL	
	Number	Rate per 100,000	Number	Rate per 100,000	Number	Rate per 100,000
<i>Under 5</i>	8	1.5	13	2.4	21	3.9
<i>5-14</i>	1	0.1	15	1.3	16	1.4
<i>15-24</i>	27	2.7	212	21.5	239	24.2
<i>25-34</i>	29	2.6	181	16.4	210	19.0
<i>35-44</i>	25	1.8	158	11.1	183	12.8
<i>45-54</i>	11	1.0	65	5.9	76	6.9
<i>55-64</i>	8	1.1	17	2.3	25	3.4
<i>65-74</i>	4	0.7	14	2.4	18	3.1
<i>75-84</i>	0	0.0	4	1.0	4	1.0
<i>85+</i>	1	0.7	4	3.0	5	3.7
TOTAL	114	1.4	683	8.4	797	9.8
Age-adjusted		1.4		8.6		10.0

Note:

1. Traumatic brain injuries include concussions, skull fractures, and intracranial injuries resulting from an external force, and are selected using:
ICD-9-CM codes 800.0-801.9, 803.0-804.9, 850.0-854.1, 959.01 for morbidity, and ICD-10 codes S01.0-S01.9, S02.0 - S02.3, S02.7-S02.9, S06.0-S06.9, S07.0-S07.1, S07.8-S07.9, S09.7-S09.9, T01.0, T02.0, T04.0, T06.0, T90.1-T90.2, T90.4-T90.5, T90.8-T90.9 for mortality.
2. Rates are adjusted to 2000 U.S. standard population.
3. Source: Center for Health Statistics, New Jersey Department of Health and Senior Services.

**TABLE 4D: SELF-INFLICTED
TRAUMATIC BRAIN INJURIES
BY AGE AND OUTCOME
NEW JERSEY, 1999**

AGE GROUP	FATAL		NON-FATAL		TOTAL	
	Number	Rate per 100,000	Number	Rate per 100,000	Number	Rate per 100,000
<i>Under 5</i>	0	0.0	0	0.0	0	0.0
<i>5-14</i>	0	0.0	1	0.1	1	0.1
<i>15-24</i>	12	1.2	5	0.5	17	1.7
<i>25-34</i>	28	2.5	7	0.6	35	3.2
<i>35-44</i>	26	1.8	1	0.1	27	1.9
<i>45-54</i>	29	2.6	2	0.2	31	2.8
<i>55-64</i>	15	2.1	0	0.0	15	2.1
<i>65-74</i>	19	3.3	0	0.0	19	3.3
<i>75-84</i>	17	4.3	0	0.0	17	4.3
<i>85+</i>	8	6.0	1	0.7	9	6.7
<i>TOTAL</i>	154	1.9	17	0.2	171	2.1
<i>Age-adjusted</i>		1.8		0.2		2.1

Note:

1. Traumatic brain injuries include concussions, skull fractures, and intracranial injuries resulting from an external force, and are selected using:
ICD-9-CM codes 800.0-801.9, 803.0-804.9, 850.0-854.1, 959.01 for morbidity, and ICD-10 codes S01.0-S01.9, S02.0 - S02.3, S02.7-S02.9, S06.0-S06.9, S07.0-S07.1, S07.8-S07.9, S09.7-S09.9, T01.0, T02.0, T04.0, T06.0, T90.1-T90.2, T90.4-T90.5, T90.8-T90.9 for mortality.
2. Rates are adjusted to 2000 U.S. standard population.
3. Source: Center for Health Statistics, New Jersey Department of Health and Senior Services.

**TABLE 5: FIREARM-RELATED
TRAUMATIC BRAIN INJURIES
BY AGE AND OUTCOME
NEW JERSEY, 1999**

AGE GROUP	FATAL		NON-FATAL		TOTAL	
	Number	Rate per 100,000	Number	Rate per 100,000	Number	Rate per 100,000
<i>Under 5</i>	1	0.2	0	0.0	1	0.2
<i>5 – 14</i>	1	0.1	2	0.2	3	0.3
<i>15-24</i>	42	4.3	13	1.3	55	5.6
<i>25-34</i>	55	5.0	12	1.1	67	6.1
<i>35-44</i>	41	2.9	7	0.5	48	3.4
<i>45-54</i>	29	2.6	0	0.0	29	2.6
<i>55-64</i>	18	2.5	0	0.0	18	2.5
<i>65-74</i>	23	4.0	0	0.0	23	4.0
<i>75-84</i>	19	4.8	0	0.0	19	4.8
<i>85+</i>	9	6.7	0	0.0	9	6.7
<i>TOTAL</i>	238	2.9	34	0.4	272	3.3
<i>Age-adjusted</i>		2.9		0.4		3.3

Note:

1. Traumatic brain injuries include concussions, skull fractures, and intracranial injuries resulting from an external force, and are selected using:
ICD-9-CM codes 800.0-801.9, 803.0-804.9, 850.0-854.1, 959.01 for morbidity, and ICD-10 codes S01.0-S01.9, S02.0 - S02.3, S02.7-S02.9, S06.0-S06.9, S07.0-S07.1, S07.8-S07.9, S09.7-S09.9, T01.0, T02.0, T04.0, T06.0, T90.1-T90.2, T90.4-T90.5, T90.8-T90.9 for mortality.
2. Rates are adjusted to 2000 U.S. standard population.
3. Source: Center for Health Statistics, New Jersey Department of Health and Senior Services.

**TABLE 6A: TRAUMATIC BRAIN INJURIES
BY CAUSE AND SEX
NEW JERSEY, 1999**

	Male	Female	Total
UNINTENTIONAL			
<i>MOTOR VEHICLE</i>			
<i>Motor vehicle occupant</i>	1,170	874	2,044
<i>Motor cyclist</i>	111	9	120
<i>Pedal cyclist</i>	116	14	130
<i>Pedestrian</i>	303	161	464
<i>Motor vehicle – other</i>	8	3	11
<i>Motor vehicle - unspecified</i>	60	35	95
<i>TOTAL MOTOR VEHICLE</i>	1,768	1,096	2,864
<i>OTHER TRANSPORTATION</i>			
<i>Non-motor vehicle</i>	107	18	125
<i>Pedestrian</i>	16	7	23
<i>Other transport</i>	232	163	395
<i>TOTAL OTHER TRANSPORTATION</i>	355	188	543
<i>OTHER</i>			
<i>Fall</i>	1,568	1,326	2,894
<i>Struck by/against</i>	184	53	237
<i>Other unintentional</i>	374	212	586
<i>TOTAL OTHER</i>	2,126	1,591	3,717
<i>TOTAL UNINTENTIONAL</i>	4,249	2,895	7,124
INTENTIONAL			
<i>Self inflicted/Suicides</i>	147	24	171
<i>Assaults/Homicides</i>	674	123	797
<i>TOTAL INTENTIONAL</i>	821	147	968
<i>Other external</i>	50	38	88
<i>Undetermined</i>	30	5	35
<i>Unknown</i>	176	60	236
<i>TOTAL, ALL CAUSES</i>	5,326	3,125	8,451

Note:

1. Traumatic brain injuries include concussions, skull fractures, and intracranial injuries resulting from an external force, and are selected using:
ICD-9-CM codes 800.0-801.9, 803.0-804.9, 850.0-854.1, 959.01 for morbidity, and ICD-10 codes S01.0-S01.9, S02.0 - S02.3, S02.7-S02.9, S06.0-S06.9, S07.0-S07.1, S07.8-S07.9, S09.7-S09.9, T01.0, T02.0, T04.0, T06.0, T90.1-T90.2, T90.4-T90.5, T90.8-T90.9 for mortality.
2. Source: Center for Health Statistics, New Jersey Department of Health and Senior Services.

**TABLE 6B: TRAUMATIC BRAIN INJURIES
BY CAUSE AND OUTCOME
NEW JERSEY, 1999**

	Fatal	Non-fatal	Total
UNINTENTIONAL			
<i>MOTOR VEHICLE</i>			
<i>Motor vehicle occupant</i>	113	1,931	2,044
<i>Motor cyclist</i>	6	114	120
<i>Pedal cyclist</i>	11	119	130
<i>Pedestrian</i>	60	404	464
<i>Motor vehicle-other</i>	0	11	11
<i>Motor vehicle-unspecified</i>	50	45	95
<i>TOTAL MOTOR VEHICLE</i>	240	2,624	2,864
<i>OTHER TRANSPORTATION</i>			
<i>Non-motor vehicle</i>	3	122	125
<i>Pedestrian</i>	7	16	23
<i>Other transport</i>	34	361	395
<i>TOTAL OTHER TRANSPORTATION</i>	44	499	543
<i>OTHER</i>			
<i>Fall</i>	283	2,611	2,894
<i>Struck by/against</i>	10	227	237
<i>Other unintentional</i>	154	432	586
<i>TOTAL OTHER</i>	447	3,270	3,717
<i>TOTAL UNINTENTIONAL</i>	731	6,393	7,124
INTENTIONAL			
<i>Self inflicted/Suicides</i>	154	17	171
<i>Assaults/Homicides</i>	114	683	797
<i>TOTAL INTENTIONAL</i>	268	700	968
<i>Other external</i>	17	71	88
<i>Undetermined</i>	18	17	35
<i>Unknown</i>	7	229	236
<i>TOTAL, ALL CAUSES</i>	1,041	7,410	8,451

Note:

1. Traumatic brain injuries include concussions, skull fractures, and intracranial injuries resulting from an external force, and are selected using:
ICD-9-CM codes 800.0-801.9, 803.0-804.9, 850.0-854.1, 959.01 for morbidity, and ICD-10 codes S01.0-S01.9, S02.0 - S02.3, S02.7-S02.9, S06.0-S06.9, S07.0-S07.1, S07.8-S07.9, S09.7-S09.9, T01.0, T02.0, T04.0, T06.0, T90.1-T90.2, T90.4-T90.5, T90.8-T90.9 for mortality.
2. Source: Center for Health Statistics, New Jersey Department of Health and Senior Services.

**TABLE 7A: TRAUMATIC BRAIN INJURIES
BY COUNTY OF RESIDENCE AND SEX
NEW JERSEY, 1999**

<i>County of Residence</i>	Number			Rate per 100,000		
	Male	Female	Total	Male	Female	Total
<i>Atlantic</i>	192	128	320	165.7	103.4	133.5
<i>Bergen</i>	418	323	741	101.5	72.5	86.5
<i>Burlington</i>	205	127	332	97.8	59.1	78.2
<i>Camden</i>	439	259	698	180.9	99.5	138.7
<i>Cape May</i>	67	46	113	141.8	90.6	115.3
<i>Cumberland</i>	142	81	223	205.6	114.0	159.2
<i>Essex</i>	530	275	805	149.6	70.0	107.7
<i>Gloucester</i>	161	89	250	131.4	69.6	99.8
<i>Hudson</i>	528	254	782	197.8	88.8	141.5
<i>Hunterdon</i>	31	25	56	49.6	40.2	45.0
<i>Mercer</i>	341	171	512	210.5	99.5	153.4
<i>Middlesex</i>	364	199	563	103.1	54.6	78.4
<i>Monmouth</i>	402	257	659	135.3	81.8	107.8
<i>Morris</i>	192	132	324	84.7	55.7	69.9
<i>Ocean</i>	364	241	605	153.4	92.6	121.6
<i>Passaic</i>	466	204	670	198.9	81.3	138.1
<i>Salem</i>	41	24	65	131.0	72.2	100.7
<i>Somerset</i>	99	78	177	69.9	53.3	61.4
<i>Sussex</i>	66	48	114	91.3	66.3	78.8
<i>Union</i>	242	131	373	101.0	50.5	74.8
<i>Warren</i>	36	33	69	73.6	64.2	68.8
<i>TOTAL</i>	5,326	3,125	8,451	135.0	74.5	103.8

Note:

1. Traumatic brain injuries include concussions, skull fractures, and intracranial injuries resulting from an external force, and are selected using:
ICD-9-CM codes 800.0-801.9, 803.0-804.9, 850.0-854.1, 959.01 for morbidity, and ICD-10 codes S01.0-S01.9, S02.0 - S02.3, S02.7-S02.9, S06.0-S06.9, S07.0-S07.1, S07.8-S07.9, S09.7-S09.9, T01.0, T02.0, T04.0, T06.0, T90.1-T90.2, T90.4-T90.5, T90.8-T90.9 for mortality.
2. Source: Center for Health Statistics, New Jersey Department of Health and Senior Services.

**TABLE 7B: TRAUMATIC BRAIN INJURIES
BY COUNTY OF RESIDENCE AND OUTCOME
NEW JERSEY, 1999**

<i>County of Residence</i>	Number			Rate per 100,000		
	Fatal	Non-fatal	Total	Fatal	Non-fatal	Total
<i>Atlantic</i>	36	284	320	15.0	118.5	133.5
<i>Bergen</i>	80	661	741	9.3	77.1	86.5
<i>Burlington</i>	55	277	332	13.0	65.3	78.2
<i>Camden</i>	87	611	698	17.3	121.4	138.7
<i>Cape May</i>	13	100	113	13.3	102.0	115.3
<i>Cumberland</i>	34	189	223	24.3	134.9	159.2
<i>Essex</i>	122	683	805	16.3	91.4	107.7
<i>Gloucester</i>	34	216	250	13.6	86.2	99.8
<i>Hudson</i>	70	712	782	12.7	128.8	141.5
<i>Hunterdon</i>	7	49	56	5.6	39.3	45.0
<i>Mercer</i>	31	481	512	9.3	144.1	153.4
<i>Middlesex</i>	74	489	563	10.3	68.1	78.4
<i>Monmouth</i>	106	553	659	17.3	90.4	107.8
<i>Morris</i>	47	277	324	10.1	59.8	69.9
<i>Ocean</i>	68	537	605	13.7	107.9	121.6
<i>Passaic</i>	60	610	670	12.4	125.8	138.1
<i>Salem</i>	15	50	65	23.2	77.5	100.7
<i>Somerset</i>	26	151	177	9.0	52.4	61.4
<i>Sussex</i>	7	107	114	4.8	73.9	78.8
<i>Union</i>	58	315	373	11.6	63.2	74.8
<i>Warren</i>	11	58	69	11.0	57.8	68.8
TOTAL	1,041	7,410	8,451	12.8	91.0	103.8

Note:

1. Traumatic brain injuries include concussions, skull fractures, and intracranial injuries resulting from an external force, and are selected using:
ICD-9-CM codes 800.0-801.9, 803.0-804.9, 850.0-854.1, 959.01 for morbidity, and ICD-10 codes S01.0-S01.9, S02.0 - S02.3, S02.7-S02.9, S06.0-S06.9, S07.0-S07.1, S07.8-S07.9, S09.7-S09.9, T01.0, T02.0, T04.0, T06.0, T90.1-T90.2, T90.4-T90.5, T90.8-T90.9 for mortality.
2. Source: Center for Health Statistics, New Jersey Department of Health and Senior Services.

**TABLE 7C: TRAUMATIC BRAIN INJURIES
BY COUNTY OF RESIDENCE AND MAJOR CAUSE
NEW JERSEY, 1999**

<i>County of Residence</i>	Number			Rate per 100,000		
	Transport	Falls	Assaults	Transport	Falls	Assaults
<i>Atlantic</i>	167	99	27	69.7	41.3	11.3
<i>Bergen</i>	325	292	33	37.9	34.1	3.9
<i>Burlington</i>	147	118	19	34.6	27.8	4.5
<i>Camden</i>	311	230	88	61.8	45.7	17.5
<i>Cape May</i>	43	54	6	43.9	55.1	6.1
<i>Cumberland</i>	111	55	31	79.2	39.3	22.1
<i>Essex</i>	224	293	154	30.0	39.2	20.6
<i>Gloucester</i>	137	69	14	54.7	27.5	5.6
<i>Hudson</i>	224	289	128	40.5	52.3	23.2
<i>Hunterdon</i>	19	22	1	15.3	17.7	0.8
<i>Mercer</i>	260	148	45	77.9	44.3	13.5
<i>Middlesex</i>	242	213	33	33.7	29.7	4.6
<i>Monmouth</i>	327	202	45	53.5	33.0	7.4
<i>Morris</i>	36	72	4	7.8	15.5	0.9
<i>Ocean</i>	362	162	12	72.8	32.6	2.4
<i>Passaic</i>	236	260	100	48.7	53.6	20.6
<i>Salem</i>	39	13	3	60.4	20.1	4.6
<i>Somerset</i>	69	60	12	24.0	20.8	4.2
<i>Sussex</i>	20	39	3	13.8	27.0	2.1
<i>Union</i>	100	172	36	20.0	34.5	7.2
<i>Warren</i>	8	32	3	8.0	31.9	3.0
TOTAL	3,407	2,894	797	41.8	35.5	9.8

Note:

1. Traumatic brain injuries include concussions, skull fractures, and intracranial injuries resulting from an external force, and are selected using:
ICD-9-CM codes 800.0-801.9, 803.0-804.9, 850.0-854.1, 959.01 for morbidity, and ICD-10 codes S01.0-S01.9, S02.0 - S02.3, S02.7-S02.9, S06.0-S06.9, S07.0-S07.1, S07.8-S07.9, S09.7-S09.9, T01.0, T02.0, T04.0, T06.0, T90.1-T90.2, T90.4-T90.5, T90.8-T90.9 for mortality.
2. Source: Center for Health Statistics, New Jersey Department of Health and Senior Services.

**TABLE 7D: TRAUMATIC BRAIN INJURIES
BY COUNTY OF RESIDENCE AND AGE
NEW JERSEY, 1999**

<i>County of Residence</i>	Under 15		15-24		24-44	
	Number	Rate per 100,000	Number	Rate per 100,000	Number	Rate per 100,000
<i>Atlantic</i>	41	82.2	58	192.5	47	92.4
<i>Bergen</i>	80	52.2	73	79.1	152	58.7
<i>Burlington</i>	38	41.3	49	94.0	86	65.3
<i>Camden</i>	104	86.1	142	231.8	176	114.5
<i>Cape May</i>	7	35.4	17	168.8	26	98.8
<i>Cumberland</i>	27	82.9	54	302.3	64	155.9
<i>Essex</i>	112	70.0	131	131.4	199	84.7
<i>Gloucester</i>	41	68.4	43	136.6	61	78.2
<i>Hudson</i>	136	123.6	126	172.7	200	109.4
<i>Hunterdon</i>	6	23.0	12	89.7	9	21.5
<i>Mercer</i>	50	74.1	90	195.1	154	148.9
<i>Middlesex</i>	75	54.2	97	99.5	128	54.8
<i>Monmouth</i>	79	59.8	120	174.4	166	86.7
<i>Morris</i>	45	49.5	43	79.4	54	36.9
<i>Ocean</i>	66	64.9	114	225.7	137	104.0
<i>Passaic</i>	84	78.2	132	199.8	211	140.0
<i>Salem</i>	6	41.7	17	229.1	15	82.8
<i>Somerset</i>	30	53.3	23	76.0	38	38.5
<i>Sussex</i>	25	70.0	15	93.8	16	32.3
<i>Union</i>	40	41.1	50	85.6	73	47.7
<i>Warren</i>	7	31.4	6	54.0	17	54.4
TOTAL	1,099	65.1	1,412	143.0	2,065	81.6

Note:

1. Traumatic brain injuries include concussions, skull fractures, and intracranial injuries resulting from an external force, and are selected using:
ICD-9-CM codes 800.0-801.9, 803.0-804.9, 850.0-854.1, 959.01 for morbidity, and ICD-10 codes S01.0-S01.9, S02.0 - S02.3, S02.7-S02.9, S06.0-S06.9, S07.0-S07.1, S07.8-S07.9, S09.7-S09.9, T01.0, T02.0, T04.0, T06.0, T90.1-T90.2, T90.4-T90.5, T90.8-T90.9 for mortality.
2. Rates adjusted to 2000 U.S. standard population.
3. Source: Center for Health Statistics, New Jersey Department of Health and Senior Services.

Continued on next page

**TABLE 7D: TRAUMATIC BRAIN INJURIES
BY COUNTY OF RESIDENCE AND AGE
NEW JERSEY, 1999**

<i>County of Residence</i>	45-64		65-74		75+	
	Number	Rate per 100,000	Number	Rate per 100,000	Number	Rate per 100,000
<i>Atlantic</i>	47	92.4	34	198.5	57	133.5
<i>Bergen</i>	120	52.2	82	118.5	234	86.5
<i>Burlington</i>	62	41.3	31	99.9	66	78.2
<i>Camden</i>	91	86.1	48	143.1	137	138.7
<i>Cape May</i>	19	35.4	11	110.3	33	115.3
<i>Cumberland</i>	31	82.9	9	90.5	38	159.2
<i>Essex</i>	131	70.0	53	111.5	179	107.7
<i>Gloucester</i>	37	68.4	22	136.9	46	99.8
<i>Hudson</i>	129	123.6	52	144.1	139	141.5
<i>Hunterdon</i>	10	23.0	4	63.7	15	45.0
<i>Mercer</i>	97	74.1	34	147.0	87	153.4
<i>Middlesex</i>	88	54.2	66	123.9	109	78.4
<i>Monmouth</i>	93	59.8	62	161.1	139	107.8
<i>Morris</i>	59	49.5	26	92.9	97	69.9
<i>Ocean</i>	94	64.9	66	122.4	128	121.6
<i>Passaic</i>	115	78.2	36	121.1	92	138.1
<i>Salem</i>	6	41.7	6	113.8	15	100.7
<i>Somerset</i>	31	53.3	13	73.9	42	61.4
<i>Sussex</i>	28	70.0	13	206.9	17	78.8
<i>Union</i>	72	41.1	28	72.9	110	74.8
<i>Warren</i>	11	48.8	5	76.2	23	68.8
TOTAL	1,371	75.0	701	121.4	1,803	103.8

Note:

1. Traumatic brain injuries include concussions, skull fractures, and intracranial injuries resulting from an external force, and are selected using:
ICD-9-CM codes 800.0-801.9, 803.0-804.9, 850.0-854.1, 959.01 for morbidity, and ICD-10 codes S01.0-S01.9, S02.0 - S02.3, S02.7-S02.9, S06.0-S06.9, S07.0-S07.1, S07.8-S07.9, S09.7-S09.9, T01.0, T02.0, T04.0, T06.0, T90.1-T90.2, T90.4-T90.5, T90.8-T90.9 for mortality.
2. Rates adjusted to 2000 U.S. standard population.
3. Source: Center for Health Statistics, New Jersey Department of Health and Senior Services.

**TABLE 8: TBI-RELATED HOSPITALIZATIONS
BY DISPOSITION AND AGE
NEW JERSEY, 1999**

<i>Disposition</i>	Under 15	15-24	25-44	45-64	65-74	75+	Total
<i>Home</i>	995	1,120	1,561	922	364	678	5,640
<i>Skilled nursing</i>							
<i>home</i>	15	28	45	90	99	491	768
<i>Rehabilitation</i>	32	85	121	117	76	164	595
<i>Home therapy</i>	12	19	36	22	34	132	255
<i>Died</i>	40	121	233	190	126	331	1,041
<i>Left against advice</i>	5	39	69	30	2	7	152
<i>Total</i>	1,099	1,412	2,065	1,371	701	1,803	8,451

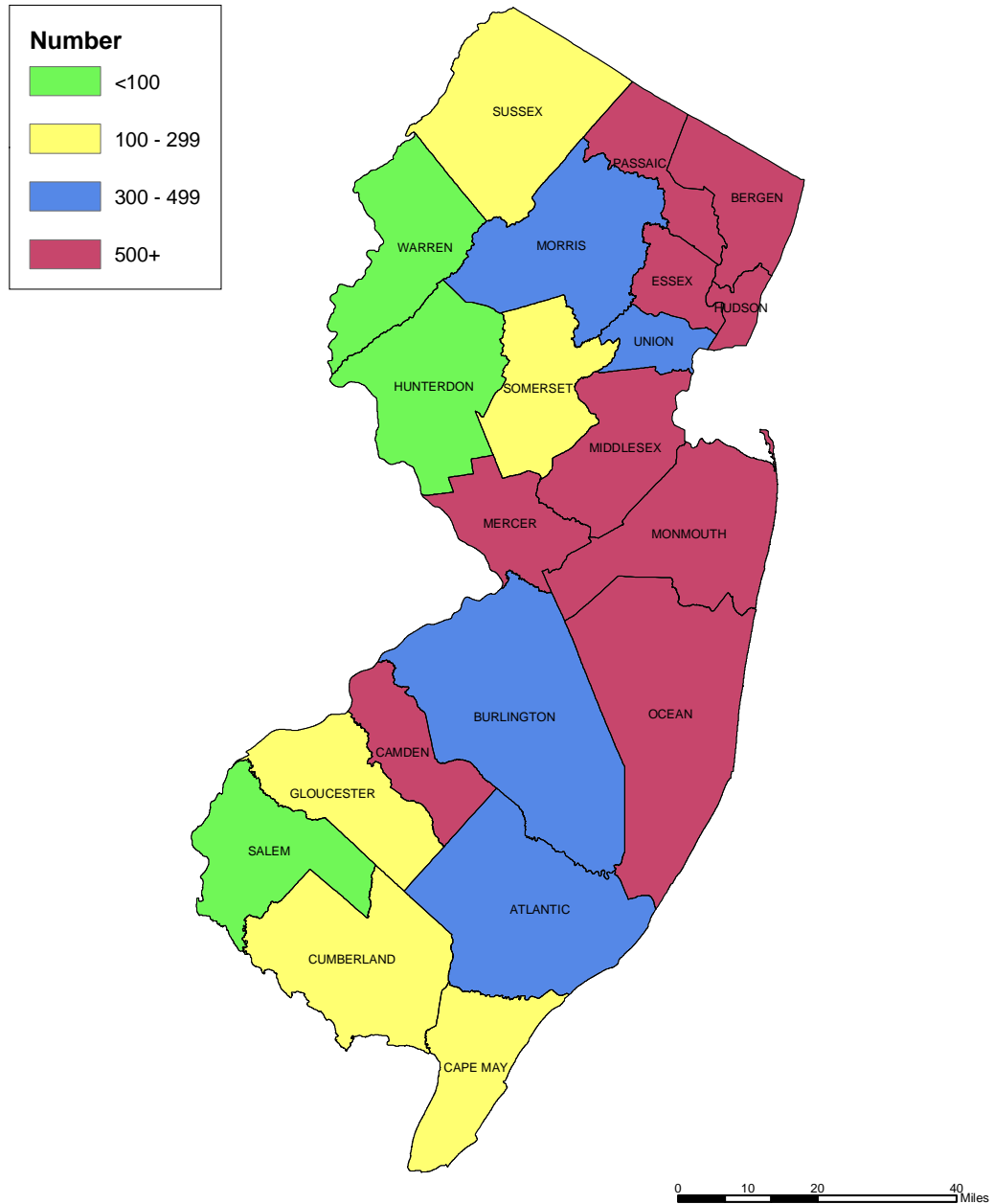
**TABLE 9: TBI-RELATED HOSPITALIZATION CHARGES
AND IN-PATIENT CARE DAYS
BY EXPECTED PRIMARY PAYER
NEW JERSEY, 1999**

<i>Expected primary payer</i>	Number	Percent	Total Charges	Charges Per discharge	Mean length of stay (days)
<i>Commercial insurance</i>	4,298	54.6%	\$118,863,294	\$27,656	6.4
<i>Self-pay</i>	1,381	17.6%	\$30,011,816	\$21,732	5.0
<i>Medicare/Medicaid/ Other Governmental Workers compensation</i>	1,943	24.7%	\$56,501,553	\$29,080	8.6
	249	3.2%	\$6,678,984	\$26,823	5.9
<i>TOTAL</i>	7,871	100.0%	\$212,055,647	\$26,941	6.7

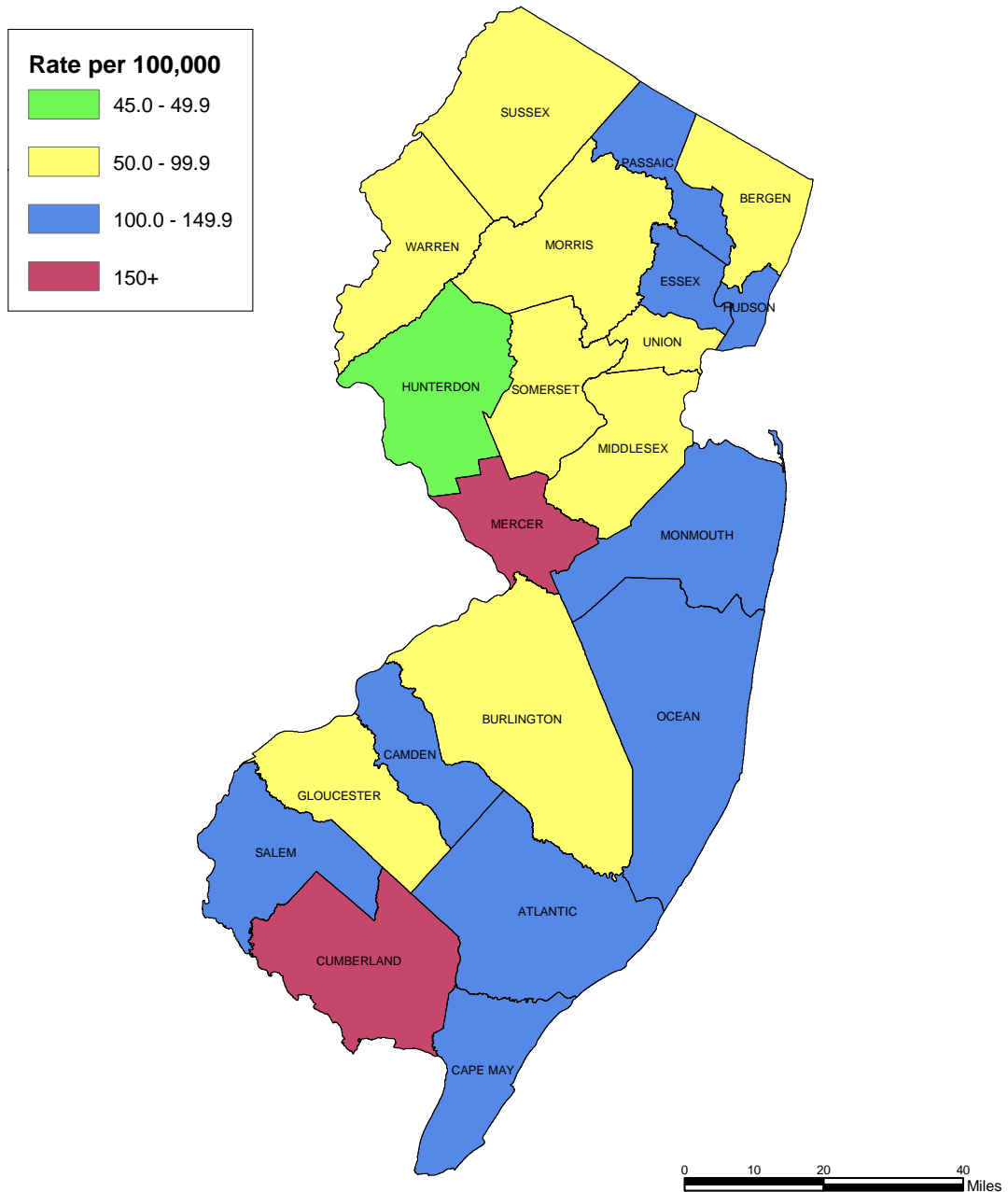
Note:

1. Traumatic brain injuries include concussions, skull fractures, and intracranial injuries resulting from the external force, and are selected using:
ICD-9-CM codes 800.0-801.9, 803.0-804.9, 850.0-854.1, 959.01 for morbidity.
2. Source: Center for Health Statistics, New Jersey Department of Health and Senior Services.

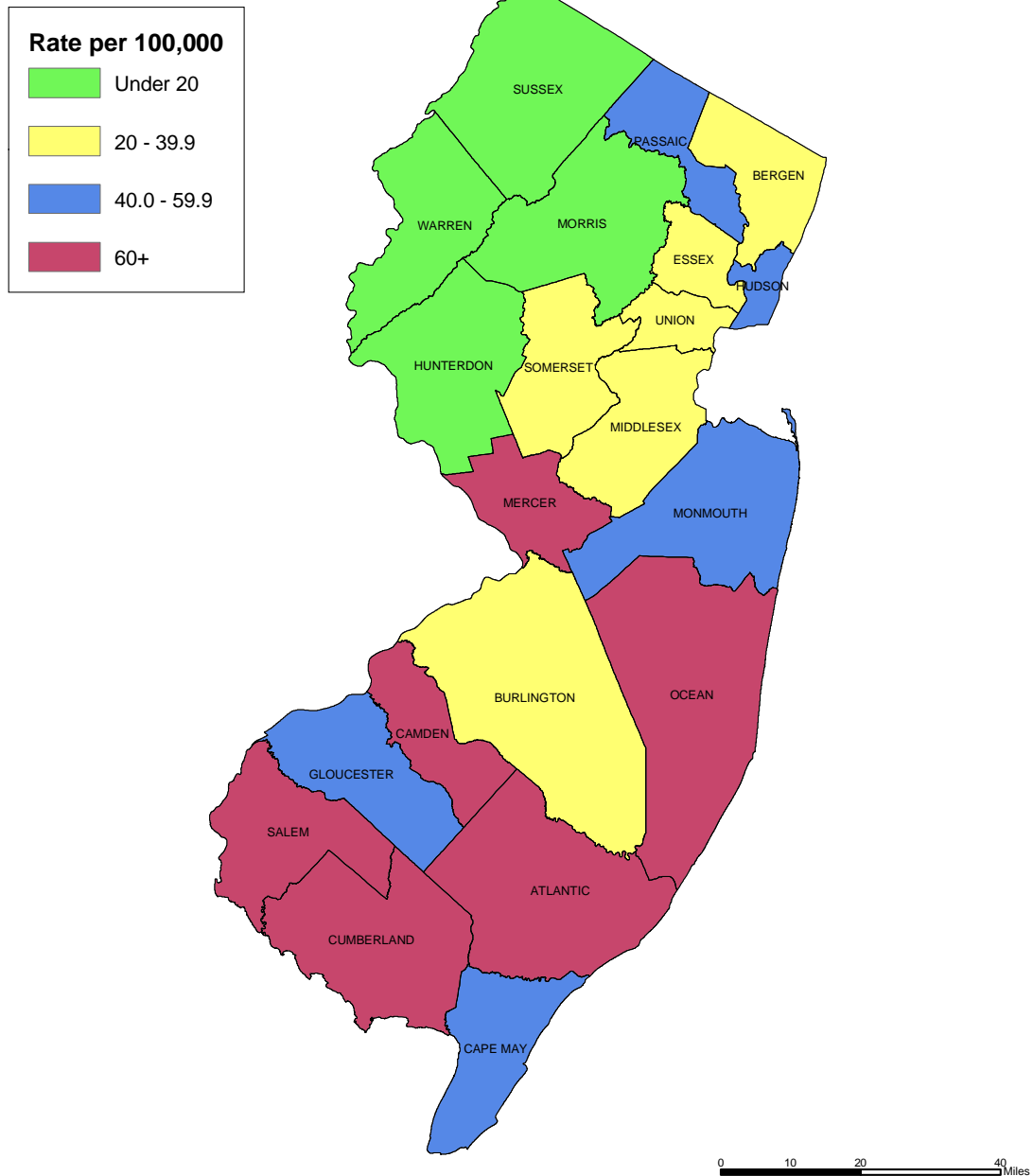
Map 1: Traumatic Brain Injuries By County of Residence New Jersey, 1999



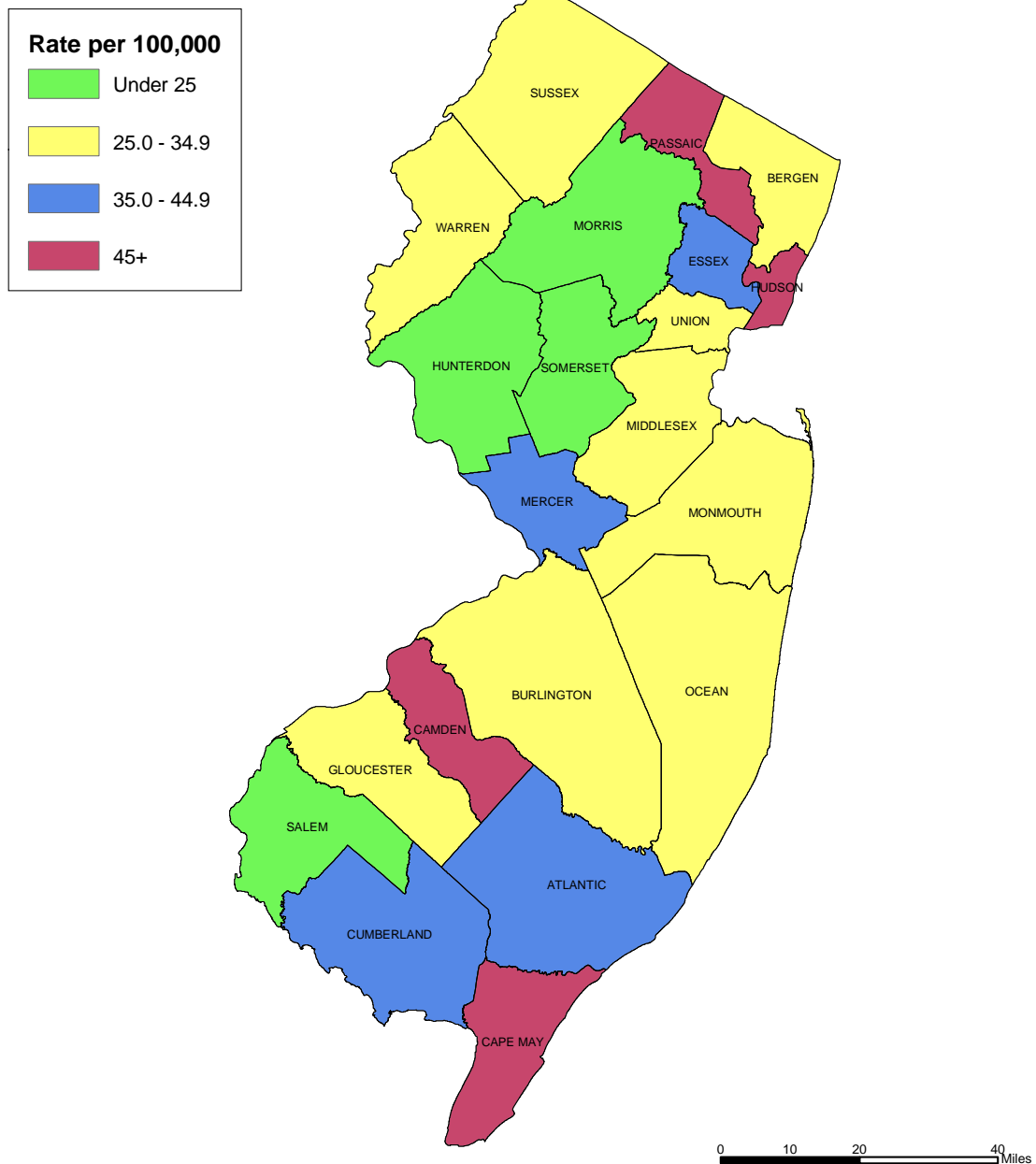
Map 2: Traumatic Brain Injury Rate By County of Residence New Jersey: 1999



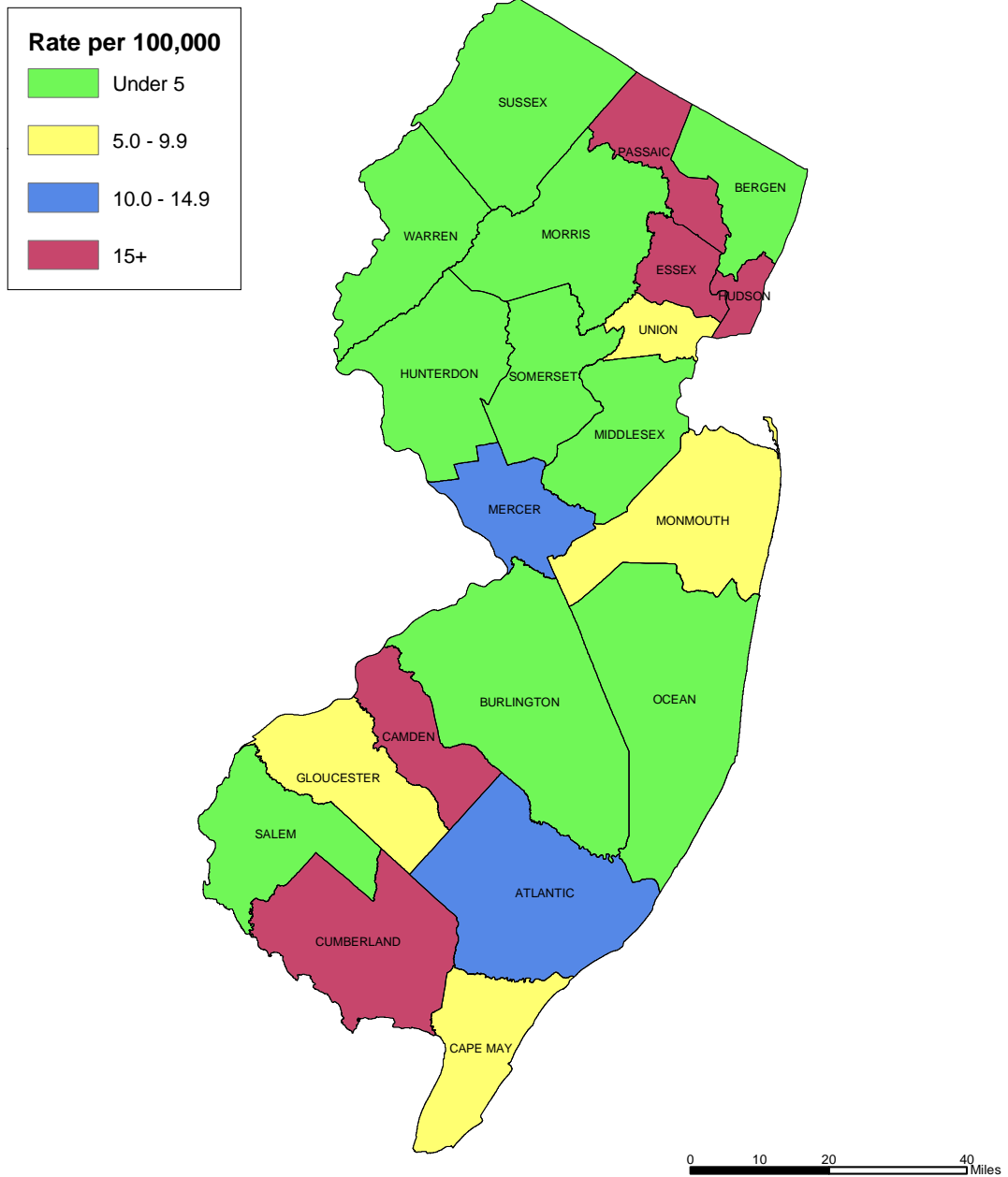
**Map 3: Transport-Related Traumatic Brain Injury Rate
By County of Residence
New Jersey: 1999**



**Map 4: Fall-Related Traumatic Brain Injury Rate
By County of Residence
New Jersey: 1999**



**Map 5: Assault-Related Traumatic Brain Injury Rate
By County of Residence
New Jersey: 1999**





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